

## **REMARKS**

Claims 1-6, 9-39 and 41-43 are pending in this application. Claims 1, 9, 18, 21, 27, 32 and 38 are independent. Claims 7, 8, 40 and 44-53 have been cancelled. Claims 12, 13, 16, 21, 27 and 38 have been amended to correct their form.

The Office Action objects to the drawings for allegedly failing to show each limitation of claims 44-53. Claims 44-53 have been cancelled, thereby rendering the objection moot.

The Office Action objects to claims 10, 12, 13, 16, 21 and 27 for various informalities. Applicant has amended claims 10, 12, 13, 16, 21 and 27 to correct their form in accordance with suggestions provided by the Examiner, thereby obviating these objections.

### **Rejection Under 35 U.S.C. 112, second paragraph**

The Office Action rejects claim 7 under 35 U.S.C. 112, second paragraph, as being indefinite. Applicant has cancelled claim 7, thereby rendering the rejection moot.

### **Rejection Under 35 U.S.C. 103**

The Office Action rejects claims 1-7 and 9-53 under 35 U.S.C. 103 as being unpatentable over Koenck et al. U.S. Patent No. 6,931,095 ("Koenck").

The present invention provides an x-ray pallet processing system and method for irradiating pallets that cannot be irradiated by conventional techniques throughout their complete volumes. In one embodiment, a scan horn scans electron beamlets through a sweep angle and a dipole bends the electron beamlets to focus the electron beamlets at the pallet center. After being bent, the beam is converted to x-rays that are irradiated through the pallet to the pallet center.

During irradiation, the pallet is moved in a direction substantially perpendicular to the irradiation such that one quarter of the pallet is irradiated in the first pass. When the quadrant radiation is completed, the radiation is interrupted and the pallet is rotated 90 degrees to irradiate the next quadrant. The operation is sequentially repeated for each of the four pallet sides, which define the pallet's complete cross-sectional area.

Koenck teaches an irradiation assembly for irradiating large articles that are up to about 48 inches thick. The assembly provides radiation to an article from all sides in a 360-degree exposure range. A conveying system carries the article through at least one irradiating subsystem in a number of passes appropriate to provide x-ray radiation to the article in the full 360 degree exposure range. An accelerator generates an electron beam, and a magnet assembly shapes and deflects the electron beam in a sweep path through a scan horn, and an x-ray conversion plate converts the electron beam into an x-ray radiation beam.

Independent claim 1 recites *a motor having first and second states of operation for rotating the pallet... wherein the motor rotates the pallet through a particular angle each time that the source of radiation and the holder are in the second state*. Koenck fails to teach the use of a motor for rotating the pallet during a second state of the source of radiation. Moreover, Koenck clearly fails to disclose a motor that rotates the pallet through a particular angle each time the source of radiation and the holder are in a second state. For these reasons, Koenck fails to render obvious claim 1, and claims 2-7, which depend therefrom.

Independent claim 9 recites *a system for irradiating a pallet, including a magnetic lens for focusing the radiation at a particular position in the pallet*. Koenck fails to teach the use of a magnetic lens for focusing the radiation at a particular position in the pallet. Instead, Koenck

teaches the use of a bending magnet assembly 64 that redirects the electrons received from deflection magnet 56 at an angle. Since Koenck fails to disclose the use of a magnetic lens, it fails to render obvious claim 9, and claims 10-17, which depend therefrom.

Independent claim 18 recites *a system for irradiating a pallet, including a drive member for rotating the pallet through a particular angle, with the source of x-rays not being energized, to the pallet after the irradiation of the first portion of the pallet, the source of radiation being thereafter operative to energize another portion of the pallet, with the pallet non-rotary, and to focus the radiation from the source toward the center of the pallet.* Koenck does not disclose the use of a drive member for rotating the pallet through a particular angle, with the source of x-rays not being energized, to the pallet after the irradiation of the first portion of the pallet, the source of radiation being thereafter operative to energize another portion of the pallet, with the pallet non-rotary, and to focus the radiation from the source toward the center of the pallet. For this reason, Koenck fails render obvious claim 18, and claims 19 and 20, which depend therefrom.

Independent claim 21 recites *a source of radiation having energized and de-energized states, a scan horn and a dipole magnet constructed and disposed relative to each other to irradiate, with the radiation from the source, a portion of the pallet, wherein the pallet is not rotated when the source of radiation is in the energized state.* Koenck fails to teach a scan horn and a dipole magnet constructed and disposed to irradiate a portion of the pallet. In addition, Koenck does not teach a source of radiation having energized and de-energized states, wherein the pallet is not rotated when the source of radiation is in the energized state. For these reasons, Koenck fails to render obvious claim 21, and claims 22-26, which depend therefrom.

Independent claim 27 recites *a control system for initially providing for a radiation from the source to the pallet without any rotation of the pallet, then for a rotation of the pallet relative to the magnetic members and then for another radiation from the radiation source to the pallet without any rotation of the pallet.* Koenck fails to teach the use of a control system for rotating the pallet relative to magnetic members and then another rotation from the radiation source to the pallet without rotation of the pallet. Since Koenck fails to disclose such a control system, it fails to render obvious claim 27, and claims 28-31, which depend therefrom.

Independent claim 32 recites *a method of irradiating a pallet, comprising directing radiation in a first plane from a source to the pallet, providing a magnetic lens to focus the radiation in the first plane at a central position in the pallet while the radiation is directed to the pallet, and moving the pallet past the radiation in a direction substantially perpendicular to the first plane during the direction of the radiation from the source to the pallet.* As discussed hereinabove with respect to claim 9, Koenck fails to teach the use of a magnetic lens for focusing the radiation at a particular position in the pallet. Instead, Koenck teaches the use of a bending magnet assembly 64 that redirects the electrons received from deflection magnet 56 at an angle. Since Koenck fails to disclose a method featuring the use of a magnetic lens, it fails to render obvious claim 32, and claims 33-37, which depend therefrom.

Independent claim 38 recites a system comprising *a dipole for bending the charged articles to extend in a particular direction through the pallet, wherein the converter has an arcuate periphery and wherein the charged particles pass to the center of the pallet through the arcuate periphery in a direction substantially perpendicular to the arcuate periphery.* Koenck fails to teach a dipole for bending the charged articles to extend in a particular direction through

the pallet. In addition, Koenck does not teach a converter having an arcuate periphery, wherein the charged particles pass to the center of the pallet through the arcuate periphery in a direction substantially perpendicular to the arcuate periphery. For these reasons, Koenck fails to render obvious claim 38, and claims 39 and 41-43, which depend therefrom.

In view of the above, Applicants' respectfully request withdrawal of the rejection of claims 1-7 and 9-53 under 35 U.S.C. 102(e).

To the extent that the Office Action relies upon the use of Official Notice to conclude that the claimed limitations are obvious without the use of a secondary teaching reference, Applicant respectfully requests, under MPEP 2144.03, that the Examiner cite a reference that teaches each and every limitation of the claims. Alternatively, should the Examiner possess personal knowledge concerning the intrinsic obviousness of the claimed features, Applicant requests that the Examiner support the data with an affidavit. (see, 37 CFR 1.104(d)(2), which states that "(w)hen a rejection in an application is based on facts within the personal knowledge of an employee of the Office, the data should be as specific as possible and the reference must be supported, when called for by the applicant, by the affidavit of such employee...").

**Conclusion**

It is believed this amendment now has placed the application in condition for consideration and allowance. If necessary, the Commissioner is hereby authorized in this and concurrent replies to charge payment (or credit any overpayment) to Deposit Account No. 50-0683 of Luce, Forward, Hamilton & Scripps.

Respectfully submitted,

Date

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